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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/851,264	05/08/2001	Johannes Petrus Verduijn	95M014/3	2981

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EXAMINER

NGUYEN, TAM M

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 07/08/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/851,264

Applicant(s)

VERDUIJN ET AL.

Examiner

Tam M. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 26-34 and 36-42 is/are pending in the application.
- 4a) Of the above claim(s) 26-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 34 and 36-43 is/are rejected.
- 7) ☒ Claim(s) 34 and 41 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### TITLE

The title is objected because it does not include the use of the zeolite as claimed in the elected claims. The examiner suggests that the title should be recited as --Zeolites and hydroconversion processes--.

### *Election/Restrictions*

Applicant's election with traverse of Group II, claims 34 and 36-42, in Paper No. 6 is acknowledged. The traversal is on the ground(s) that the different classifications of Groups I and II are not necessarily conclusive on the question of restriction and election is noted. However, the argument is not found persuasive because the composition of Group I is different from the composition (catalyst) in Group II and, therefore, the search require for group II is not required for Group I.

The requirement is still deemed proper and is therefore made FINAL.

### *Claim Objections*

Claim 34 is objected to because of the following informalities: The phrase "zeolite formed of cylindrical crystallites having basal planes so shaped that the ratio of axial" is missing from the unmarked version of claim 34. Appropriate correction is required.

Claim 41 is objected to because of the following informalities: The expression "60 microns" in line 3 of the claim appears to be incorrect. The examiner suggests that the expression should be recited as --0.6 microns--.

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***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 34 and 36-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Verduijn (5,396,009) (hereafter "Verduijn-1") in view of Verduijn et al. (5,064,630) (hereafter "Verduijn-2").

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Verduijn-1 discloses a process for isomerization of an aliphatic hydrocarbon to produce aromatic hydrocarbons by contacting the aliphatic hydrocarbon with a catalyst comprising a Group VIII metal, and L-zeolite (which is the same as LTL zeolite) wherein the L-zeolite comprises alumina and crystallizes in the form of cylinders with basal planes of such a shape that the ratio of axial length of curved cylindrical surface (l) to the overall axial length of the crystallite (h) is greater than 0.9, the length of the crystallites is greater than 0.9 ( $h = 1$ ), and the mean diameter of the crystallites is in the range of at least  $0.05\mu$ . Since the ratio of the axial length of the cylindrical surface (l) to the mean diameter (d) is preferably at least  $0.5\mu$  (or .75-5) while l is preferably about the same as h and d is preferably of from 0.1 to  $0.5\mu$ , it is estimated that when d equals  $0.1\mu$  and  $l/d$  equals .75, the mean length of the crystallites would be less than 0.6 microns (e.g., 0.075). The contacting step is at a temperature of from 370 to  $600^{\circ}\text{C}$ . (See abstract; col. 5, lines 1-25; col. 11, lines 32-64)

Claim 34 and 42:

Verduijn-1 does not disclose that the catalyst comprises gallium. However, Verduijn-2 discloses an aromatization process wherein the process utilizes L-zeolite comprising either gallium or aluminum (see Verduijn-2; abstract; col. 1, lines 59-65; col. 5, lines 1-13; col. 7, lines 37-40). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Verduijn-1 by utilizing gallium instead of aluminum as taught by Verduijn-2 because gallium has an equivalent function as aluminum in the catalyst. As a result, the modified zeolite of Verduijn-1 would not comprise aluminum.

Claims 36, 37 and 41:

The mean diameter of the crystallites ranges from 0.1 to  $0.5\mu$  (see col. 5, lines 23-24)

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Claim 38, 39 and 41:

Since the ratio of the axial length of the cylindrical surface ( $l$ ) to the mean diameter ( $d$ ) is preferably at least  $0.5\mu$  (or .75-5) while  $l$  is preferably about the same as  $h$  and  $d$  is preferably of from 0.1 to  $0.5\mu$ , it is estimated that when  $d$  equals  $0.2\mu$  and  $l/d$  equal 1, the mean length of the crystallites is  $0.2\mu$ . (See col. 5, lines 1-25)

Claim 40:

The aspect ratio of length to diameter of the crystallites is at least 0.5 microns (this overlaps the claimed aspect ratio). See Verduijn-1 col. 5, lines 16-18.

Alternatively,

Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Verduijn (5,396,009) (hereafter "Verduijn-1") in view of Verduijn et al. (5,064,630) (hereafter "Verduijn-2") and Verduijn (WO 91/06367) (hereafter Verduijn-3).

The processes of Verduijn-1 and Verduijn-2 are discussed above.

Both Verduijn-1 and Verduijn-2 do not specifically disclose that the aspect ratio of length ( $h$ ) to diameter ( $d$ ) of the crystallites is **at most**  $0.5\mu$ . However, Verduijn-3 discloses an aromatization process wherein a L-zeolite with an aspect ratio of length to diameter of the crystallites at most of  $0.5\mu$  is used (see Verduijn-3; page 3, lines 22-24; page 23; lines 3-6). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Verduijn-1/Verduijn-2 by utilizing a L-zeolite having the  $h/d$  ratio of from 0.2 to  $0.5\mu$  as taught by Verduijn-3 because such ratios would result in better yield and selectivity.

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*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tam M. Nguyen whose telephone number is (703) 305-7715.

The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 703-308-6824. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-5408 for regular communications and (703) 305-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

  
\_\_\_\_\_  
Tam M. Nguyen  
Examiner  
Art Unit 1764

TN  
June 30, 2003